# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/455,932 | 12/07/1999 | TETSUYA OKANO | 1341.1035/JD | 5754 |

| 21171 | 7590 | 07/06/2005 |
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| EXAMINER |
|---|
| STRANGE, AARON N |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2153 | |

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|  | Application No. | Applicant(s) |  |
| :--- | :--- | :--- | :--- |
| **Office Action Summary** | 09/455,932 | OKANO ET AL. |  |
|  | Examiner | Art Unit |  |
|  | Aaron Strange | 2153 |  |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on _31 March 2005_.

2a) ☒ This action is **FINAL**.     2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) _1,4 and 6-8_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1,4 and 6-8_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All   b) ☐ Some *  c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1.    The Examiner would like to note that the present application has been

reassigned to a new Examiner.

### *Response to Amendment*

2.    The amendment filed 3/31/05 has been entered. Claims 1, 4, and 6-8 have been

amended and are presented for further examination. Claims 2, 3, and 5 were previously

cancelled.

3.    Applicant's amendments to claims 1,4, and 6-8 are sufficient to overcome the

rejections presented under 35 USC 112, first paragraph, presented in the Office action

of 1/7/05.

### *Response to Arguments*

4.    Applicant's arguments filed 3/31/05 have been fully considered but they are not

persuasive.

5.    With regard to claims 1,4, and 6-8, and Applicant's assertion that "As noted by

the Examiner, Jindal does not explicitly show the bandwidth measuring parameter for

round trip time, maximum segment size, and adjustable congestion-evading congestion

window size", it is noted that such a limitation no longer appears in the claims. All

pending claims have been amended to list all of the elements as alternatives. For

example, claim 1 presently recites "wherein the parameters include at least one of: a

round trip time, a maximum segment size, or an adjustable congestion-evading

congestion window size for a server terminal utilizing TCP, or a number of simulated

sessions for a server terminal utilizing UDP".

6.      With further regard to claims 1,4, and 6-8, and Applicant's assertion that "Neither

the IBM Technical Disclosure nor Martin disclose estimating an effective bandwidth

using a number of simulated sessions for a server terminal utilizing UDP", it is noted

that this limitation is claimed as an alternative. Even if such an assertion were true, such

a limitation need not be present in the cited art in order to meet the limitations of the

present claims. Only a single element of the grouping discussed above needs to be

present in the combination of Jindal, Martin and the IBM Technical Disclosure in order

to fully meet the claim limitations. As discussed in the Office action of 1/7/05, and the

present action, multiple elements from the group are present.

### Claim Rejections - 35 USC § 112

7.      The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

8.      Claims 1,4,6,7, and 8 rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

9.      With regard to claim 1, the limitation "wherein the parameters include at least one

of: a round trip time, a maximum segment size, or an adjustable congestion-evading

congestion window size for a server terminal utilizing TCP, or a number of simulated

sessions for a server terminal utilizing UDP" is unclear. It is unclear how Applicant

intends for the elements to be grouped. It in unclear if the parameters include at least

one of a group of 4 parameters or if they include one of a group of 3 parameters for

TCP connections or one of a group of 1 parameter for UDP connections.

## Claim Rejections - 35 USC § 103

10.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.     Claims 1, 4, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Jindal et al. (US 6,327,622) in view of "Dynamic Computation of TCP Maximum

Window Size for Directly Connected Hosts" (hereinafter referred to as the IBM Technical

Disclosure), and in further view of Martin (US 6,263,368).

12.     In referring to claim 1, Jindal shows a system for load balancing in a network

environment having a plurality of clients and servers (see fig. 1). Selection of server is

based on status and operational characteristics of each server, which are collected by.

each server and sent to a central server. Jindal teaches:

A plurality of route loading measuring units (fig. 2, IMO, 210, 212, 214) each

provided in each of said server terminals (110, 112, 114) and each measuring a

respective load in a route from the unit to one client terminal having a request for

service out of said client terminal (col. 8 lines 24-30, 37-41).

A selection unit (central server 100) which selects one server terminal out of said

terminals as a destination of the request for service from said one client terminal based

on the load measured by said route loading measuring units (IMO) (col. 5 lines 26-30,

36-41), wherein each of said route loading measuring units monitors (IMO) operating

states or respective server terminals and when a request for service is received from

client terminal, said selecting unit (110) selects one server terminal out of said server

terminal as a destination of the request for service from said one client terminal based

on the load and the operating states monitored by said load measuring units (col. 6 lines

46-56), wherein the operating states include idle and active states (col. 5 line 6-7).

A storing unit (RMO) which stores the load measured at a pre-specified time

internal by each of said route load measuring units, wherein when a request for service

is received from said one client terminal, said selection unit selects said one server

terminal out of said server terminals as a destination of the request for service from said

one client terminal based on the load stored in the storing unit (RMO, col. 7 lines 55-67,

and as applicant points out in response dated December 31, 2003, on page 7 lines 4-6,

the claimed features of claim 2 are inherent to claim 1 since effective bandwidth is generally measured over a time interval), and .

Wherein said route-measuring units (IMO) each measures, as the load, an effective bandwidth of the route (col. 5 lines 4-15).

Although Jindal shows substantial features of the claimed invention, Jindal does not explicitly show the bandwidth measuring parameter for round-trip time, maximum segment size or adjustable congestion-evading congestion window size for a terminal utilizing TCP, or a number of simulated sessions for a server terminal utilizing UDP. Nonetheless these features are well known in the art, and would have been an obvious modification to the system disclosed by Jindal, as evidenced by IBM technical disclosure.

In an analogous art, the IBM technical disclosure shows dynamic computation of various network parameters which aid to improve the performance of connections in a · network. The IBM technical disclosure shows parameters including round trip time (ANALYSIS section, first two bullets), maximum segment size (COMPUTING WINDOW section, last bullet), and an adjustable congestion-evading congestion window size (Disclosure text, first bullet).

Given these features, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Jindal to employ the features shown by the IBM technical disclosure in order to make accurate traffic measurement.

Although the above cited references show substantial features of the claimed

invention, they do not explicitly show a UDP delivery route. Nonetheless this feature is

well known, if not inherent in the art, and would have been an obvious modification to

the system disclosed by Jindal and IBM as evidenced by Martin. In an analogous art,

Martin shows a network load balancing system for a multi-computer server by counting

message packet. Martin shows the measuring of respective load including TCP and

UDP traffic flows (col. 6 lines 30-65, col. 10 lines 37-63).

Given this feature, a person of ordinary skill in the art would have readily

recognized the desirability and advantages of modifying the system shown by Jindal

and IBM to employ the feature shown by Martin in order to account for total effective

Internet traffic on a network link.

13.     In referring to claims 4 and 6, in addition to the rejection of claim 1 above, Jindal

discloses a selecting unit (100) selecting a route measuring unit (IRMO, 406a, 416a) as

a primary destination of the request based on load measured and operating status (fig.

3, col. 48 line 48- col. 10 line 12), and a system for load balancing among replicated

services having server terminals divided into sever groups each having at least two of

the server terminals (see Fig. 3, server farms) and selecting one server terminal out of

the server terminals based on operating status in the group as a secondary destination

of the request for service from said one client terminal (see Fig. 4; Note that in Fig. 4

each "IRMO" points to multiple servers, therefore it is clear that one server terminal

(secondary destination) will be selected based upon the results of an operating status

and/or load characteristics).


14.    In referring to claim 7 and 8 Jindal shows:

A plurality of path load measuring and operating state monitoring devices (IMO)

in each server, arranged to measure effective bandwidths of path loads from a client

terminal requesting service to server terminals, wherein effective bandwidth is based

monitoring states of several terminals, idle and active states (col. 5 lines 4-15).

A DNS-responding device to compare effective bandwidth of measurements of

path loads from the plurality of path load measuring and operating state monitoring

devices to the client terminal and to select a server terminal having a larges effective

bandwidth and an active operating state to provide service to the client terminal (col. 5

lines 16-24).

Although Jindal shows substantial features of the claimed invention, Jindal does

not explicitly show the bandwidth measuring parameter for round-trip time, maximum

segment size or adjustable congestion-evading congestion window size for a terminal

utilizing TCP, or a number of simulated sessions for a server terminal utilizing UDP.

Nonetheless these features are well known in the art, and would have been an obvious

modification to the system disclosed by Jindal, as evidenced by IBM technical

disclosure.

In an analogous art, the IBM technical disclosure shows dynamic computation of

various network parameters which aid to improve the performance of connections in a

network. The IBM technical disclosure shows parameters including round trip time

(ANALYSIS section, first two bullets), maximum segment size (COMPUTING WINDOW

section, last bullet), and an adjustable congestion-evading congestion window size

(Disclosure text, first bullet).

Given these features, a person of ordinary skill in the art would have readily

recognized the desirability and advantages of modifying the system shown by Jindal to

employ the features shown by the IBM technical disclosure in order to make accurate

traffic measurement.

Although the above cited references show substantial features of the claimed

invention, they do not explicitly show a UDP deliver route. Nonetheless this feature is

well known, if not inherent in the art, and would have been an obvious modification to

the system disclosed by Jindal and IBM as evidenced by Martin. In an analogous art,

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Given this feature, a person of ordinary skill in the art would have readily

recognized the desirability and advantages of modifying the system shown by Jindal

and IBM to employ the feature shown by Martin in order to account for total effective

Internet traffic on a network link.

### *Conclusion*

15.    **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

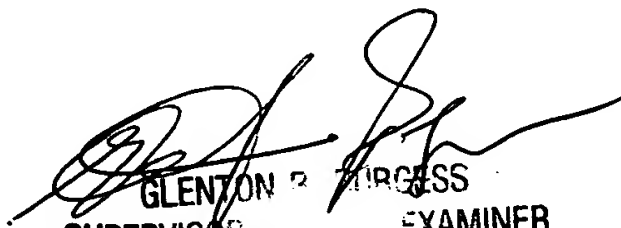than SIX MONTHS from the mailing date of this final action.

16.    Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Aaron Strange whose telephone number is 571-272-

3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

AS
6/28/05

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